

Claims

1. A method for controlling a mobile communications network by a hierarchical radio network operations system with at least one radio network operations system on a subordinate level and a radio network operations system on a superior level comprising the steps of
 - initiating a controlling action on the part of the radio network operations system on the superior level,
 - generating a call for data depending on the controlling action,
 - forwarding the call to at least one of the radio network operations systems on the subordinate level affected by the controlling action,
 - providing data on the part of the radio network operations system on the subordinate level affected by the controlling action in response to the call, and
 - forwarding the data to the radio network operations system on the superior level.
2. A method for controlling a mobile communications network by a hierarchical radio network operations system according to claim 1 which further comprises the steps of
 - executing the controlling action on the basis of the retrieved data.
3. A method for controlling a mobile communications network by a hierarchical radio network operations system according to claim 1 which further comprises the steps of
 - retrieving data by the radio network operations system on the superior level from at least one of the radio network operations systems on the subordinate level,
 - exporting the retrieved data by the radio network operations system on the subordinate level,
 - importing the data by the radio network operations system on the superior level, and

- storing the imported data to data storing means in the radio network operations system on the superior level.
4. A method for controlling a mobile communications network by a hierarchical radio network operations system according to claim 3 which further comprises the steps of
- ascertaining whether the call for data demanded depending on the controlling action is to be forwarded to the radio network operations system on the subordinate level affected by the controlling action
 - forwarding the call for data to the data storing means when the call is not to be forwarded to the radio network operations system on the subordinate level,
 - providing data on the part of the data storing means in response to the call, and
 - forwarding the data within the radio network operations system on the superior level.
5. A method for controlling a mobile communications network by a hierarchical radio network operations system according to claim 4 which further comprises the steps of
- ascertaining whether the data demanded depending on the controlling action can be received from the radio network operations system on the subordinate level affected by the controlling action within a predetermined latency, and
 - forwarding the call for data to the data storing means when the data can not be received within a predetermined latency
- before providing data on the part of the data storing means.
6. A method for controlling a mobile communications network by a hierarchical radio network operations system according to claim 1,

wherein the controlling action comprises monitoring and controlling a configuration of radio network elements and/or radio network resources.

7. A method for controlling a mobile communications network by a hierarchical radio network operations system according to claim 1, wherein the data demanded depending on the controlling action comprise network elements parameters and/or network resources parameters of the radio network on the subordinate level.
8. A method for controlling a mobile communications network by a hierarchical radio network operations system according to claim 1, wherein the data demanded depending on the controlling action comprise topology data of the radio network on the subordinate level.
9. A method for controlling a mobile communications network by a hierarchical radio network operations system according to claim 1, wherein said radio network operations system on a subordinate level is an operations system for managing a regional radio network.
10. A hierarchical radio network operations system for controlling a mobile communications network, the hierarchical radio network operations system comprising
 - at least one radio network operations system on a subordinate level,
 - a radio network operations system on a superior level,
 - initiating means being part of the radio network operations system on the superior level arranged for initiating a controlling action,
 - call generating means arranged for generating a call for data depending on the controlling action,
 - a first interface between said radio network operations system on the subordinate level and said radio network operations system on the superior level arranged for forwarding the call to at least one of the

radio network operations systems on the subordinate level affected by the controlling action and for forwarding data to the radio network operations system on the superior level, and

- first providing means being part of the radio network operations system on the subordinate level arranged for providing data in response to the call.

11. A hierarchical radio network operations system for controlling a mobile communications network according to claim 10 which further comprises executing means arranged for executing the controlling action on the basis of the retrieved data.

12. A hierarchical radio network operations system for controlling a mobile communications network according to claim 10 which further comprises

- retrieving means being part of the radio network operations system on the superior level arranged for retrieving data from at least one of the radio network operations systems on the subordinate level,
- exporting means being part of the radio network operations system on the subordinate level arranged for exporting the retrieved data,
- importing means being part of the radio network operations system on the superior level arranged for importing the data, and
- data storing means being part of the radio network operations system on the superior level arranged for storing the imported data.

13. A hierarchical radio network operations system for controlling a mobile communications network according to claim 12 which further comprises

- first ascertaining means being part of the radio network operations system on the superior level arranged for ascertaining whether the call for data demanded depending on the controlling action is to be forwarded to the radio network operations system on the subordinate level affected by the controlling action,

- second providing means being part of the radio network operations system on the superior level arranged for providing data stored in the data storing means in response to the call, and
 - a second interface within said radio network operations system on the superior level further being arranged for forwarding the call for data to said second providing means when the call is not to be forwarded to said radio network operations system on the subordinate level and for forwarding the data provided by said providing means within the radio network operations system on the superior level.
14. A hierarchical radio network operations system for controlling a mobile communications network according to claim 13 wherein said first and second interfaces are uniform interfaces.
15. A hierarchical radio network operations system for controlling a mobile communications network according to claim 13 which further comprises second ascertaining means being part of the radio network operations system on the superior level arranged for ascertaining whether the data demanded depending on the controlling action can be received from the radio network operations system on the subordinate level affected by the controlling action within a predetermined latency, said second interface further being arranged for forwarding the call for data to said second providing means when the data can not be received within a predetermined latency.
16. A hierarchical radio network operations system for controlling a mobile communications network according to claim 10 which further comprises
- monitoring means arranged for monitoring configuration of radio network elements and/or radio network resources and
 - controlling means arranged for controlling configuration of radio network elements and/or radio network resources.

17. A hierarchical radio network operations system for controlling a mobile communications network according to claim 13
wherein said call generating means, said first and second interfaces, and said first and second providing means are arranged for generating and forwarding a call for network elements parameters and/or network resources parameters and for forwarding and providing said parameters.
18. A hierarchical radio network operations system for controlling a mobile communications network according to claim 13
wherein said call generating means, said first and second interfaces, and said first and second providing means are arranged for generating and forwarding a call for topology data and for forwarding and providing said topology data.
19. A hierarchical radio network operations system for controlling a mobile communications network according to claim 18
wherein said first and second interfaces and said first and second providing means comprise topology reading means and managed object reading means.
20. A hierarchical radio network operations system for controlling a mobile communications network according to claim 13 which further comprises
- second data storing means being part of the radio network operations system on the superior level arranged for storing planned data;
 - third providing means being part of the radio network operations system on the superior level arranged for providing said planned data, and
 - a third interface arranged for forwarding the call for data to said third providing means and for providing said planned data within the radio network operations system on the superior level.

21. A hierarchical radio network operations system for controlling a mobile communications network according to claim 10
wherein said radio network operations system on a subordinate level is an operations system for managing a regional radio network.